2007 STRATEGIC PLAN

for the

MAHONING COUNTY, OHIO

DATA PROCESSING BOARD

Prepared By:

Michael V. Sciortino

Mahoning County Auditor

Secretary & Administrator, Data Processing Board

&

Jacob A. Williams

Mahoning County IT Director

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this strategic plan is to summarize the goals and issues facing the Data Processing Department. This plan will categorize and prioritize the items most important to the success of this department in the coming year and beyond. These descriptions will include a discussion of the resources necessary for completion, estimated timelines, and a narrative of the potential impact of each item on the County.

This strategic plan will serve as the basis of Data Processing Department decisions and actions for the near future. These issues will be weighed against the contents and priorities of this plan and appropriately evaluated. Data Processing will make every effort to adhere to the following plan in support of its primary mission as described below.

1.2 Mission Statement

> *"The mission of Mahoning County Data Processing Department is to provide and maintain a stable and secure network infrastructure, including knowledgeable staff, necessary to support the information systems critical to the County's day to day operations. Additionally, the Data Processing Department will provide proactive, cost effective solutions for County workflow processes and network environment."*

1.3 Issue Categorization & Goals

Adherence to Data Processing's Mission Statement requires a thorough evaluation of all critical issues facing the department. For the purposes of this document short term refers to goals expected to complete within the year while long term goals refer to those items relevant within the next three years. The rapid advance of both technology and the County's needs make detailed planning beyond a three year horizon suspect to inappropriate speculation. A yearly review and analysis will serve to keep both the short term and long term goals in line with Data Processing's primary mission.
A thorough examination of existing and expected resources and demands shows that the majority of critical Data Processing issues belong to one of the following 5 categories:

- Infrastructure Issues & Direction
- New Software Initiatives
- Staffing Overview
- Internal Employee Education, Training, and Policy
- Business Application Systems

2.0 INFRASTRUCTURE ISSUES AND DIRECTION

An information technology organization's effectiveness will always be limited by the infrastructure it is built upon. Just as a cracked foundation will lead to structural problems in a home, a poor technology infrastructure will forever lead to consistent end user problems, security issues, disaster recovery obstacles and barriers to standards and new system implementations. For these and numerous other reasons, building a proper infrastructure will remain top priority of the Data Processing Department.

It shall also remain vitally important to continually manage internal and external expectations on this issue. Data Processing staff, department heads, and end users must all be educated to understand that until critical infrastructure problems are resolved there may be no feasible workarounds for some common end user issues. Certain end user needs may go unanswered in the short term while Data Processing concentrates on fixing or building the necessary infrastructure components an enterprise like Mahoning County requires. As Mahoning County continues to utilize more technologies across more departments and agencies it becomes even more critical to ensure a proper infrastructure foundation. Failure to maintain a suitable infrastructure to support continued growth will lead to extreme systems and operational problems.

The infrastructure referred to above consists of a physical and logical layer. The physical infrastructure layer is made up of the core switches, routers, firewalls, data & voice lines, and servers that make up the County's physical wide area network. Flaws in the implementation or deployment of any of these pieces can affect every aspect of Data Processing's operations.

The logical layer consists of the network domain structure, security boundaries, network communication protocols, and back office software systems that support the standard information needs of any organization. The proper functionality of these systems are critical to simply maintaining a stable networked environment, independent of any County specific business applications.

While 2006 was clearly a year that Mahoning County Data Processing dedicated much of its resources to improving the infrastructure of the County IP network and core operational systems, 2007 can be considered as the hybrid bridge that will connect Mahoning County to the year(s) of the Applications in 2008 and, potentially into 2009. In 2007, DP will focus in improving on some of infrastructures upgrades from 2006, as well as begin rolling out upgrades to existing applications. Additionally, with new major updates from our vendors, time will be spent testing and evaluating products to determine a suitable timetable for rollout. Other items for consideration are global licensing agreements, long-term support agreements and potential cost-saving plans for the way that the county purchases computer equipment. Planning and implementations of new site installations must also be addressed.

The sections below detail the currently identified critical infrastructure issues pending resolution by the Data Processing Department.

2.1 Master Maintenance Agreement –Voice & Data Network

On March 1, 2006, Mahoning County Data Processing entered into a 36 month Master Discount Agreement with AT&T to place all voice and data lines under one 'umbrella' contract. Addendums to the contracts covered legacy products, Centrex lines, POTS lines and other network services. Additionally, a separate 1 year agreement was reached to secure low-cost Long Distance for the county. Due to amount of unknown and known network design and existing product inadequacies, the MDA was created to allow for renegotiation at the time when DP had a clearer idea of the long-term plan for these services.

DP has spent much time working to create the most cost-efficient, redundant, and accurately documented network for the greater good of Mahoning County. By mid-2007, it is a goal of DP to renegotiate a long-term (5-7 years) MDA with AT&T that will leverage all newly implemented technologies and focus on the consolidation of services to achieve the lowest possible costs. This MDA will consist of:

- Sensible MAR – (Minimum Annual Revenue) Commitment that reflects the best discount for the highest revenue commitment without risk paying penalty for falling under the amount in a given calendar year.
- Contract length of 5-7 years – if cost reductions are realized as a result.
- Ability to groom the network, i.e. reducing lines that are not used, and adding lines as necessary, within an acceptable range.
- Decrease of Centrex line reliance and increased reliance of ISDN Primes.
- Options to upgrade to any newer technology that may be developed and would be advantageous for the County.
- Historical Service Level Performance

When complete, DP projects that the savings over the 2005 annual Telecom costs to be greater than 50% or about $450K annually.

Additionally, a Long Distance agreement will need to be negotiated in 2007. DP considers this service to be a commodity and can be purchased by any vendor. Ideas to reduce costs consist of having to provide a password in order to place a long-distance call from a county handset.

2.2 Convergence of County Voice & Data Billing

DP began working with AT&T in late 2006 to create a process by which the end result would be one monthly bill that would include all departments that participate in the Fund 630 process. By Mid January 2007, the initial scope of the project was complete, and DP received their first bill with a complete hierarchical breakdown of cost based on Mahoning County's own ERP system identifiers. The value of this process in immense, as DP is now able to easily supply information about an individual departments telecom costs by referencing an on-line system that logs all costs monthly. Additionally, providing projected costs for the next year is easily attained by viewing historical data from one source. Another value is the reduction of vouchers that would have to be processed monthly, which have gone from 130 to just one. There are still some ongoing administrative tasks that must be done to improve this billing system as a result of the many add, moves, and changes that are being done to improve operations.

2.3 Leveraging Existing Technology for Reduced Data/Voice Costs

With the new technologies that have been implemented in 2006, such as the installation of a SONET ring, upgrades to the existing 10 Phone Switches, installation of 11 new Phone switches, and installation of new internet services, DP will leverage the capabilities of these systems to gain functionality and reduce costs by converging services over the same medium. By using IPRC networking, DP will use Voice over IP (VoIP) between all 21 phone systems, and use the existing lines that area already carrying IP traffic, to reduce the amount of lines needed to provide the same, or any many cases, better service to Mahoning County. Additionally, by migrating Centrex (usage based) number/lines to run over existing ISDN Primes (no usage fees), DP anticipates a savings over $110K annually. For example, the installation of an ISDN Prime at the County's JJC will result in a savings of roughly $3K monthly. The Centrex costs at this site are about $3500 monthly, by installing a Prime ($500 per month) and rolling the majority, or all, Centrex numbers to the Prime, this savings will be realized. Listed below is a sampling of the projects that DP will complete in 2007 to increase network performance, reduce costs, and create synergy between Mahoning County technology platforms.

- Migration of the Veterans Office to the County Phone System. Currently they are a stand-alone operation in a building that has the phone system capacity to handle this department.

- Migration of the Alcohol and Drug Board to the County Phone system utilizing VoIP handset and existing IP infrastructure at the site.

- Installation of ISDN Prime line at JJC and reduction of Centrex lines at this location. Additionally, the need to add a second T1 back to the Courthouse is a possibility, as they are heavily utilizing existing T1.

- Installation/expansion of IPRC Networking at Industrial Road Campus and convergence of voice and data on to the same IP network, creating a bundled dual T1 pipe to downtown for both voice and data.

- Installation/expansion of IPRC Networking at the Annex and convergence of voice and data on to the same IP network, creating a bundled 2 T1 pipe to downtown for both voice and data.

- Rolling of all remaining downtown point to point T1 lines that individually support voice and data to the SONET network.

- Movement of the remainder of the Administration Building Phone switch to the Administration building and migration of the Courthouse users to the ATM Switch in the Courthouse.

- Expansion of IT services to the Oak Hill Renaissance location to support the placement of County Departments.

2.4 Replacement of Cisco 7204 Router & Legacy Routing Equipment

Due to Cisco end-of-life & end-of-support parameters, the need to replace some routing equipment at locations is required to ensure proper support in the event of a failure. A key component of the Mahoning County IP network, a Cisco 7204 router, reached end-of –life in August of 2005. This specialized router services up to 28 T1 lines that connect to all County locations for voice and data services. In the event of a failure, these services would be unavailable to all locations for indefinite amount of time, due to specialized technology of this router and no available on site replacement. Mahoning County was able to secure a maintenance agreement with a 3rd party for this item to through Feb 2, 2007, at a cost of $5K. In 2007, this agreement was not renewed. Mahoning County DP is in the process of securing quotes for a solution, and will immediately move on the purchase of this equipment when finalized. Costs will range in $30K arena. Additionally, there are other routers located at various sites with similar issues. These routers will be replaced this year, either by using existing stock items or purchasing new equipment, These timetable to replace these items is not as urgent as the 7204 replacement, as these items are universal and there is backup equipment on site.

2.5 Data Center Physical Security Improvements

With the Data Center now being the central location for the majority of all County technical assets, improved physical security for this site is a requirement. DP has devised improvement plans, with the help of Johnson Controls, Inc., to secure the floor with additional access card readers. Expanding the existing physical security infrastructure is comprised of the following items:

- Card Scan readers will be installed at both Hallway entrances and the Training room. Access through these doors will be only for those employees that have a justifiable business need to access these locations
- Card Scan reader with Numeric keypad will be installed for Server Room Access. Only those DP employees who have a need to physically touch this equipment will have access to the Server Room. The LAN Technician II is responsible for the upkeep, climate, documentation, and accountability of all equipment in this room. The goal is to reduce traffic in this room to only the absolutely necessary.
- The middle storage room of the Data Center will be remodeled. The receptionist area will move into this room and a cut-out will be installed to view the lobby area. Openings to both halls will be installed. A new wall behind the reception will be installed and the Security doors will move to this wall to allow access to the new, smaller storage area.
- All visitors to the Data Center will have to sign in to access the Hallways and Training Room. A daily record of visitors will be kept, and no access by a visitor unless accompanied by a Data Processing department member.

Additionally, DP is working to completely re-organize the old Server Room in the Courthouse. When complete, we will have a well organized networking area, housing new data switches and cable terminations, and the phone system Rack. Dedicated areas for Payroll Printing, MVP printing, and partitioned workstations to cover other operational tasks will be created to improve workflow. Most importantly, we will remove most of the old equipment that is no longer used, greatly enhancing the storage availability and aesthetics of the room.

Not only are these changes a requirement to ensure the ongoing vitality of Mahoning County's data, these improvements will provide a more secure work environment by which staff will benefit.

2.6 Disaster Recovery Improvements

Mahoning County has been flagged by the State Auditor in recent years for the lack of a written Disaster Recovery Plan. This item has been listed as “Management Comment”, and not a “Material Weakness” or “Reportable Condition” by the State Auditor. The lack of plan has been mainly due to the required funding to create a large-scale plan to address

a natural disaster or act of war and associated loss of services. However, with newer low-cost technologies & proven industry standard implementations available to mainstream IT departments, many of Mahoning County's Disaster Recovery short-comings can be solved. DP is evaluating many solutions that will provide benefits that can be realized to improve basic operations, as well as meet Service Level requirements in the event of large scale disasters. These technologies can bridge many of the gaps that currently exist in DP's short-term, or small-scale, disaster recovery planning. These technologies and planned implementations include:

- **Implementation of "Distributed File System" or DFS**- DP is working to de-centralized file storage systems, and use DFS to provide redundancy and availability in the event of a site outage. This Microsoft technology is built into the Server Systems that are currently in place, and allows for data replication across sites. The benefits of this implementation include faster access to files because data is located at the same site as the users and duplication of data at another site in the event of an outage at the local site. Sites for these implementations include the Courthouse, Administration Building, JJC, The Annex and the Industrial Road Campus.
- **Virtualization of Servers** – Migrating servers to virtual machines will allow for instant portability of any Server to any location and any hardware. Additionally, Servers can be configured in a standby mode at an off-site, waiting to be cut over to production in a moments notice in the event of a disaster. DP is working with Dell on the evaluation and testing of software to move some of our basic systems to virtual machines. By year end, all critical Servers will be virtualized and available offsite to be activated, if needed.
- **Installation of a Diesel powered generator at Administration Building**- Currently the county's Server Room power is being conditioned by an enterprise level APC UPS system. This system will provide approximately 30 minutes of battery power to the server room in the event of a power outage. However, to address Disaster Recovery parameters, industry standard guidelines suggest that a generator be available to provide power beyond this 30 minute window. DP is working with 911 and Facilities to secure a Generator solution for the complete building. Acknowledging that the process of installing this functionality is primarily a Facilities issue, as opposed to an IT issue, DP is committed to working with County Departments to ensure this system is implemented.
- **Completion of the COPS MORE initiative** – Wide-Area Wireless point to point network. - Currently, this project is 90% complete, with just the Water tower hookups to be completed. DP is working with the City of Youngstown to secure placement of 4 parabolic antennas on their water tower on the west side of Youngstown at 49 Moherman Ave. Once this is complete, all radio links will be connected and DP can begin the configuration of the routing equipment that will send data over these links. The end result will be a high speed wireless point to point network that will be available to use in production and for redundancy. DP

will most likely use these links to support data transmissions in support of the remote courts use of the Courtview application and other bandwidth intensive applications that are not as sensitive to latency and line jitter.

2.7 State Auditor "Management Comments".

In addition to the previously mentioned "Disaster Recovery" management comment from the State Auditor, three other items "Management Comments" have been noted by the Auditors in recent years. Below are the issues and solutions planned to resolve.

1. Network Access Authorization – Defined by the State Auditor as: "Effective internal control procedures include the development of security administration procedures to guard against unauthorized access, modification, disclosure, and disruption or use of data and programs". Specifically, the State Auditor is referencing the process of verifying NTFS group access at the time of the migration from the old NT system to Active Directory in 2004. DP implemented policy to document all security requests, authorizations and changes in early 2006. However, to meet the State Auditor's comment, DP will audit all NTFS security groups, define their reason for existence, and verify with each Department Head the security requirements of their staff and the data they access for them to function. The systems include all File Storage systems, Server Access, email inbox access, voicemail Access and other system monitoring.

2. Application Access Authorization - Defined by the State Auditor as: Effective application level access provides users with the ability to update transactions and enter data, yet limits a user's access to only the transactions and data necessary to perform their job function." To meet the State Auditor's comment, DP will audit the system access for our Peoplesoft, MVP and Courtview systems, defining why users need access to what areas, and verify with the respected associated Department Head the application security requirements of their staff and the data on these Database systems.

3. Backup Tape Procedures – The State Auditor has noted that, due to DP keeping backup tapes in the tape library system located in the Server Room for a whole week prior to moving off-site, potentially, a weeks worth of data could be lost if a disaster of some type happened to the server room. DP will implement a storage device in the Courthouse basement for disk to disk file copy of all SQL server database dumps and critical files that are stored in the Server Room. This device will hold the week's worth of data that is on tape in the Tape library, thus meeting the State Auditor's requirement of protecting data on a daily timeline. Projected time of completion is May 2007.

2.8 Internal Support & Administrative Improvements

With the addition of a dedicated Help Desk technician to the Mahoning County DP staff in the summer of 2006, many benefits have been realized in the area of workflow. No longer are our support reps being pulled in many different directions during their work day due to the previous decentralized approach. The Help Desk now serves as the primary point of entry for support requests and trouble tickets. By using Help Desk software and assigning work based on category and skill based queues, DP has streamlined the process of resolving problems. Tickets are created for all reported problems and given a problem description, priority, due date and contact information for the requestor, allowing for technicians to remain focused on the problems at hand. Tickets are also created for any internal operational and administrative work that must be completed. Additionally, statistics can be pulled from this ticketing system, allowing for Management to adjust workflow as needed. New in 2007 is the requirement for all technicians to track the time worked associated with any problem ticket entered. Time accountability serves as an additional tool to adjust the workload for each staff member to provide the best service level to the end users.

2.9 Mobile Phones Administration and Support

In February of 07, The Data Processing Board approved the agenda item to have all Cell phones and mobile devices administered, managed and supported by DP. These phones include, exclusively, the mobile phones that are currently managed by Facilities. The primary reason for migration of this role to DP is the fact that cell phones are no longer just voice devices. Mobile Phones now have the ability to retrieve email, provide calendar and contact information, serve as GPS devices, and access to the internet, among many other applications. With the line between voice and data becoming faint, DP can utilize the technology of the mobile smart phone to achieve the best of both worlds. Numerous departments can benefit by having a phone that is tightly integrated with the Mahoning County network. Additionally, a vehicle for payment is already in place, with Fund 630 being the Internal Service Fund for land-based lines via AT&T. DP will take ownership of this role by summer of 07.

2.10 Blocking of Malicious Web Content & SPAM

DP will begin the blocking of web content that is malicious in March of 2007. Using a content caching Server, implemented in late 2006, Web sites that meet certain criterion and are accessed by a Mahoning County user will be filtered and blocked. This is a measure of protection for Mahoning County that has never been implemented. Additionally, to better protect against SPAM, Mahoning County will stop accepting

email on the mahoningcounty.org in early June. This domain is a heavily spammed domain in comparison to the .gov domain that is the primary internet domain for Mahoning County. The end result being a safer more productive work environment for Mahoning County employees.

2.11 Formation of PC Refresh Policy at Mahoning County

The County Currently has approximately 800 PCs on the County network. The method by which these PCs are purchased is fragmented and on an 'as-needed" basis for each department. Consequently, administration of PCs and setting hardware standards becomes challenging as each department decides when they need new technology. DP will work in 2007 to create a PC refresh Policy for the complete county, for implementation in 2008. The benefits of this system are that it would be guaranteed that the oldest equipment is taken off the network first, and all PCs could be bought at one time in bulk, reducing overall PC costs. Ideally, 25% of the County's PCs would be replaced annually. Departments will pay into a Internal service fund, and annual costs to ensure new PCs would be purchased for department every four years will be taken from this fund..

3.0 NEW SOFTWARE INTIATIVES

3.1 GIS Upgrade to ESRI 9.2 & Software Infrastructure

The GIS Department at Mahoning County is one of the county's great technological assets, and they have built a GIS system that is highly regarded by many of our peer counties. With the hardware and software reaching over 5 years old in some instances, the GIS system has outgrown its current infrastructure. Data Processing is working the GIS department to upgrade the ESRI software system to version 9.2, from version 9.0. This upgrade is a major upgrade for ESRI, and will require thorough testing, training and a redesigned GIS hardware infrastructure. With version 9.2, rather than use the 5 servers that were running these applications on Citrix powered servers, applications will be loaded locally on the PCs and connected directly to the Pre-production server for edits, testing and changes. The 5 servers will be decommissioned. A new hardware infrastructure of two GIS systems, a 'pre-production' system running 9.2, and an accompanying 9.2 web server for pre-production will be implemented. Additionally there will be a mirrored production system running the 9.2 versions of the ESRI products. An actual Development server will be deployed for testing the upgrade to SQL 2005, the new Microsoft standard in database engines. SQL 2005 provides robust scalability to databases larger than 100GB, meeting the needs of the ever-expanding GIS system. The goal is to have this system up and operation by the summer of 2007.

3.2 e-911 Emergitech CAD Upgrade

Enhanced 911 has a significant product upgrade for the Emergitech CAD (Computer Aided Dispatch) software program that is currently being used at all nine PSAPs throughout Mahoning County. This upgrade is significant because it will update the CAD system from a proprietary database system to Microsoft SQL 2005. New hardware will be purchased and implemented in support of this client-server application. Additionally new servers will be purchased to meet the hardware requirements for SQL 2005. Once complete, the CAD system will be poised to share data with some of the other SQL based systems that the County has in place, such as GIS and MVP. Additionally, this application will get the proper treatment as an official line of business application for Mahoning County, and equipment will be placed under the supervision of DP for ongoing support and planning.

3.3 e-911 Phase II Cellular Initiative

In meeting the State's requirement for determining the visually mapped location of an inbound 911 call placed from a cellular phone, DP, GIS, and e-911 will work together to

formulate and implement the best solution for Mahoning County and its residents. This initiative is being called Phase II by the State, as Phase I was complete when Caller ID for Cellular was implemented in 2004. This solution will require a mapping interface that integrates with the Emergitech CAD software. Many options exist in this 'youthful' software solution market, and the technology to enhance this initiative is improving rapidly. DP will serve as a consultant of sorts in the evaluation of software solutions, and formulation of best practices in implementation for long-term viability of the software solution.

3.4 Evaluation/Testing of New/Upgrades of Microsoft Software

- **Windows Vista** - In January of 2007, Microsoft released a new version of their world-renowned operating system for desktops and laptops. Called Windows VISTA, this product offers the latest in security, operability and performance for the end user. However, whenever an upgrade like this is released, significant evaluation and testing/planning must be completed prior to releasing this product into production. The current county standard is Windows XP Professional SP2, and this operating system meets the needs of the county. Approximately 95% of all desktops run this operating system. The remaining 5% run Windows 2000 Professional SP4. However, as the VISTA PC market matures, we will be forced to move to this desktop OS in the future.
- **Office 2007** – This upgrade to the popular Office Suite was released in January 2007. This upgrade is a major application upgrade for Microsoft, and the industry standard for applications that service Word Processing, Spreadsheet, E-mail Client access, Presentations, Forms Processing, Data collaboration, and databases. Long-term Volume Licensing options and workflow improvements to existing processes will be evaluated.
- **Exchange Server 2007** - This upgrade to our current Messaging System will require significant testing, training and planning prior to any potential rollout. Among the many benefits to this new system is tight integration with Mobile devices, improved Administrative capabilities, Disaster Recovery, and increased mailbox storage limits, as well as HIPAA and Sarbanes-Oxley compliance.
- **Windows Longhorn Server** - This upgrade to Windows 2003 Server will be release in late 2007. This Server Operating System will be installed on our domain controllers to upgrade out existing Active Directory infrastructure, and will be the future server platform for new installations.
- **Windows Sharepoint Services 2007** - This system will eventually replace the technology that is powering the Mahoning County Communicator and ONESite. This system tightly integrates with the Office Suite and is capable of Document sharing libraries, Forms Processing, Content Management and touts improved workflow and team data sharing.

3.5 Implementation of Internet Explorer 7.0

Microsoft updated their popular Web Browser, Internet Explorer, to version 7 for official release in November 2006. DP has been evaluating this browser since its release and will upgrade to this version in 2007 on all desktops and laptops. It is the goal to remain consistent with Microsoft's product cycle for this application, once all known internal issues are addressed proactively, to best support this product after implementation. Features included with this browser are improved security, enhancements, including tabbed browsing, and improved administration tools.

3.6 Evaluation of Peoplesoft Replacement

Mahoning County currently uses Peoplesoft Financials and HR modules to meet its ERP programming and business workflow. It is an outdated product; however, arguably, it still meets the needs of the county agencies. The County does not have a current support contract in place, and available training is limited due to the age of the product. Data Processing will begin evaluation of different products to determine what product on the market can meet our requirements. This process began in October 2006 and will run through 2007.

3.7 Johnson Controls Pegasys P2000 System Upgrade

DP is working with Facilities and Johnson Controls to get a clearer understanding, as well as evaluate upgrade options for the Pegasys P2000 System. This system is responsible for controlling access to doors at locations across the county. These locations include the Courthouse, Administration Building, MCJC, the minimum security Jail, the Annex and EMA/Hazmat locations. Due to the controllers to these doors being IP-enabled devices by which they communicate, DP is responsible for ensuring connectivity. DP will fully document all IP enabled devices locations and access information in 2007. Additionally, the database that stores all access card information is running on a low-end PC, thus will be potentially migrated to a virtualized server, and placed in the Server room. Other items of interest include upgrading this system to the standard version that Johnson Controls has deployed, and evaluating improved reporting options, system maintenance, and administration of the access rights to site locations.

3.8 Consolidation of IT Services to Other County Agencies

While technically tasked with servicing the technology needs of the whole county, the Data Processing Board has had little involvement in the past with certain departments including Alcohol & Drug Addiction Services Board, Department of Jobs and Family Services, Mental Health Board, Children Services Board, and Child Support Enforcement Agency. These departments have considered themselves somewhat independent and more reliant on state IT systems than the county. However, this attitude is changing rapidly and Data Processing

has recently had much success in showing some of these departments that we can provide better service and improve their operations by working closer together.

It is also clear that over time, these departments will become increasingly reliant on some of the core systems and services provided by Data Processing. For example, there are numerous efficiencies to be gained by simple changes like bringing these department staff onto the countywide email system to promote better communication across departments.

However, the transition from current arrangements to full cooperation and mutual benefit requires careful planning and coordination of resources in all departments involved. The sheer number of employees and computers in these departments brings certain challenges. We must ensure that proper licensing is in place for the increased demand on infrastructure systems like email, anti-virus, domain, etc… Additionally, existing Data Processing support personnel will be unable to support such an increase without additional staff brought on board. Staff levels are barely sufficient to meet current demands. Any increase in new users or systems to support would require commensurate increase in staff.

4.0 STAFFING OVERVIEW

In order to provide the stable and secure infrastructure described above the Data Processing Department requires staff with particular tool sets. Without enough adequately trained personnel Data Processing has no hope of meeting the demands placed upon it.

4.1 Existing Staff; Skills, Capabilities, and Training Plan

Data Processing's chief staff problem at the present time is simply manpower. Fortunately, the current staff has an impressive array of technical knowledge sufficient to meet most challenges. However, lack of manpower presents significant operational problems on a daily basis as top skilled staff are required to deal with routine help desk support issues rather than concentrate on the more critical infrastructure and system issues. **With such a thin staff the Department is continually at risk of being unable to meet its daily end user demands or critical project deadlines.** This requires tight supervision and motivation to focus the staff on the most important and effective uses of their time.

Data Processing's employees represent the most valuable asset to Mahoning County's technological infrastructure, providing support of these systems that Mahoning County relies on, as well as upgrades, design and direction. All staff members are tasked with continual education requirements to keep their certifications current, thus ensuring their ongoing familiarity with the primary technology needs likely faced by Data Processing. Each staff member will be expected to attend at least 40 hours of professional training or education a year. This will include time for taking certification exams. Additional time outside of the working environment is assumed for ongoing education of each employee. This training is through New Horizons and will be attended in Cleveland or Pittsburgh throughout the 2007 Calendar year.

4.2 Staffing Needs

With key additions to staff in 2006, Data Processing is reaping the benefit in 2007 as these employees grow and mature into the roles they were hired to fill. Most notably is the addition of a dedicated Help Desk technician (May 06) and the filling of the LAN Technician I position (Nov 06). Additionally, existing DP members have filled two critical roles as Brian Wright and Curtis Petrey have been promoted to fill the role of LAN Technician II and System Administrator, respectively. In 2007, DP is working to define the role of Application Analyst II, a key position that will support the new GIS application infrastructure, MVP and Courtview database systems, primarily, and the

associated SQL technology that powers these systems. It is goal to develop this position internally and fill it when certain measurable criterion is met. Among these are proficiency in SQL 2000 and 2005 database administration, proven ability to support these applications and SQL 2005 certification. Although tasks associated with this criterion are already being accomplished to a degree, the process by which this is done is fragmented and undefined. Mahoning County will benefit immensely by having an assigned analyst to support these tasks/applications and be accountable for the short term break fix and long-term strategic planning and viability.

The current staff and their position consist of:

Jacob Williams	Director of Information Technology
Kevin Brogley	Application Analyst III / Peoplesoft support
Curtis Petrey	System Administrator
Brian Wright	LAN Technician II
Charlie Simons	LAN Technician I
Cathy Walters	Operations MGR
Vacant	Application Analyst II
Tom Fitzgerald	Telecom Analyst
Pam Myers	Trainer
Rochelle Ead	Help Desk Technician
Nancy Turner	Administrative Assistant

5.0 INTERNAL TRAINING AND POLICY

With a pervasive and growing technology presence in the every day operations of the County it is imperative that the technical and procedural education of its employees keep pace. The county can not afford stifling costs and risks associated with improper employee training. Data Processing has aggressively sought buy-in from all county departments and agencies and will continue to deliver high quality customized training to all county employees. With the many upgrades to Microsoft's software products in 2007, proper and proactive training is critical in 2007 and into 2008 to upgrade the skill set for those users of the new technology.

Data Processing maintains a modern computer training facility capable of handling fifteen employees at a time. The room is equipped with thirteen computers and thirteen VoIP phones configured to existing county standards, an overhead projector, large wall mounted screen, white boards, and printers. This room will be utilized in the delivery of the following courses to both county employees and select groups of non employees.

5.1 Training Courses Offered

Data Processing's Technical Trainer creates and maintains a library of customized training classes and manuals specific to the county's needs. Existing courses are modified on a continual basis and new ones added as appropriate.

In the past year Data Processing has held 100+ classes and for over 700 county employees. Many of these employees have attended multiple types and levels of training. We receive very frequent testimonials from some of these users sharing how much this training has helped their jobs and made them more effective. This has also had the added benefit of significantly reducing the demand to our Help Desk for certain classes of routine PC problems.

The currently offered courses include:

1. **Windows XP - Basic Computer Skills** – Covers basic PC navigation, systems introduction, naming standards, how to manipulate files, find network resources, Saving documents and retrieving them, selecting skills, One Site, basic telephone proficiency, basic Communicator navigation, and basic emailing skills

2. **Introduction to Microsoft Word** – Covers basic Word navigation, borders and numbering, tables and clip art, thesaurus, spell and grammar check, the Format Painter, selecting skills

3. **Introduction to Microsoft Excel** – Covers basic Excel navigation, using the Fill Handle, AutoSum, other automatic formulas, hiding and not hiding columns and rows, basic print settings, initial sorting, creating new worksheet, percentage formula

4. **Introduction to Microsoft Outlook** – Covers basic Outlook navigation and organization, emailing, calendar entries, contacts, tasks, notes, and public folders.

5. **Introduction to Microsoft PowerPoint** – Covers basic PowerPoint navigation, creating of slides, using templates, adding content, adding animation, saving to a CD, running the presentation, and printing for handouts and note pages.

6. **Functional Microsoft Access** – Covers importing excel spreadsheets into Access, basic Access navigation, simple queries, simple form and report design

7. **Intermediate/Advanced Microsoft Word** – Covers advanced word processing skills including mail merge, form generation, brochure design, working with tables and graphics, using the Styles, creating a Table of Contents, advanced page numbering, Endnotes and Footnotes.

8. **Intermediate Microsoft Excel** – Covers advanced printing and sorting, subtotals, basic functions, filtering, data tools, IF and Nested IF functions, Concatenation and Trim Functions, and Excel forms.

9. **Advanced Microsoft Excel** – Covers advanced spreadsheet usage including more formulas, more data tools, advanced charting, pivot tables, and macros.

10. **Mahoning County GIS** – Is an introduction to the navigation and data available on the county's Geographical Information System

11. **Introduction to the County Communicator** - A basic overview of the functionality and technology available for departments to post information on the County Web portal, called the Mahoning County *Communicator* and what can be created for the Communicator.

12. **Updating the County Communicator** – Covers how to make changes to each department's pages on the website, adding pictures, attachments, FAQ pages, Thumbnail Galleries, Calendars and Events, new pages, Preparing a Digital Photograph for placement on the internet, and internet links.

13. **Telephone Proficiency** – Centered around the new Inter-tel Phone Systems that have been implemented to most county locations, this class teaches basic skills like answering and making calls, transferring a call, using the conference call feature, forwarding your phone to another location, using the Voice Mail features., as well as using the County Phone Directory to find employees.

14. **Vouchering in PeopleSoft** – Taught as a One-on-One class, covers the skills needed to enter a purchase order voucher, standard voucher, control group, printing and assembling of the vouchers and groups, finding a vendor number in PeopleSoft, checking fund availability both on purchase orders and standard accounts.

15. **Querying in PeopleSoft 1** – Covers how to create HR queries, manipulate criteria, export results to Excel, basic query skills and creation.

16. **Querying in PeopleSoft 2** –Covers how to create financial queries, understanding relationships, linking tables, and relationships between tables.

5.2 Increased Communication & Enforcement of Standards and Usage Policies

In addition to simply teaching county employees how to use our computers and software systems a strong effort will be made to education our employees on the proper vs. improper use of any county computing resources. All employees will receive a copy of the Data Processing Board's Computer and Email Usage Policies at the basic classes. These classes will also include discussion and education on how to avoid potential legal and ethical problems regarding illegal downloading of media and software, abuse of the internet, personal use of email, etc…

Our basic training classes will also introduce county employees to the various policies and controls Data Processing has adopted over time. These include procedures addressing common issues like password change requests, account creation, employee termination, changes to security access, etc… As our network and systems grow it will become more important that all such activities are handled systematically per standard procedures to ensure the integrity of our systems over time.

6.0 SOFTWARE SYSTEMS AND APPLICATIONS

The Data Processing Department is responsible for a number of software systems and applications that support the various needs of all county departments. These systems can be broken into two categories: infrastructure systems and business application systems. Each is described briefly below.

6.1 Infrastructure Systems

The software and applications in this category represent those necessary to provide basic networking and user services. These systems serve the day to day needs of the entire organization and are necessary regardless of the needs of any one department. This category includes the following:

- **Active Directory** – The "mahoningcountyoh.gov" Windows 2003 Active Directory domain is the underlying framework that provides for user and group account management and security. Users and Groups form the basis of all systems access control. There are approximately 800 user accounts and 150 groups in the MahoningCountyoh.gov domain. Several hundred additional accounts and groups exist in certain secondary domains.
- **DNS, DHCP, WINS –** These systems manage the network protocols and addressing schemes that enable all computers and devices to talk across the physical network.
- **EMC Celerra CX500 –** This is the primary storage hardware and software system that provides disk space to the main county application and file servers. This Network- attached storage device is new in 2006 and provides significant redundancy and self healing capabilities to minimize the potential for data loss. This storage system also provides for extensive expansion capabilities. Mahoning County currently has approximately 10 Terabytes of disk space on this hardware. This space is primarily used for file storage and the GIS, MVP, and CourtView systems.
- **File Server –** This system works in conjunction with the above mentioned Celerra NAS and provides Microsoft's Distributed File System (DFS) and Shadow Copy Services, providing seamless access to critical files and data backup and restoration. Through log-in scripts all end users have drives mapped to the central servers. This ensures maximum ability to provide secure, responsive file access and regular backup and restore capabilities.
- **Print Server –** Print servers manage the queues for all networked printers. They house driver information for all operating systems and provide the interface for end users to print to a networked printer from their local PC. We plan to phase out the County's reliance on a print server for in favor newer, less expensive technology.
- **VERITAS Net Backup** – Upgraded in 2006, this system runs the latest version of Netbackup and is the central enterprise backup system providing the interface to backup to tape all critical county data and systems. Approximately 3 Terabytes of

data are backed up to tape on a daily basis. Once a week one set of tapes are then taken off site and stored permanently.

- **McAfee epolicy Orchestrator** – This provides enterprise wide anti-virus management capabilities. This system pushes regular updates of anti virus definitions to all county computers and our email system.
- **Exchange Server 2003 Enterprise Edition –** This is the county email system. This server software, in conjunction with the Outlook client on end user's computers enables all county employees to send and receive email. The current Exchange system manages approximately 800 mailboxes but is expected to grow to over 900 users in the near future as more departments consolidate their third party email usage onto our system.
- **Sonasoft Sonasafe Exchange Backup system -** Implemented in January of 07, Sonasafe for Exchange provides an integrated backup/recover solution for the Exchange server. With the ability to recover point and time backups, disk saving compression and the ability to recover a single e-mail message in just one click Sonasafe is the method of choice for our Exchange environment. Currently we have implemented a disk to disk to tape solution which allows for not only long-term retention off-site but also the speed of a disk to disk restore.
- **Cisco PIX and ASA Security Devices –** DP has implemented new Firewall and VPN services to support county remote workers, as well as protect the County network from the external world. These devices provide intrusion detection, Syslog monitoring and SNMP trapping for pro-active security monitoring. This system also provides secure site-to-site VPN connectivity over the internet to a few select sites.
- **Cisco Routing and Switching software –** The County uses Cisco hardware and software exclusively for IP routing and data switching services. These systems work together to provide network subnet segmenting, QoS, intelligent routing, and connectivity to all IP enabled Mahoning County devices.
- **Solarwinds ORION Network Performance Monitor -** This real-time monitoring system is integrated with our Cisco powered IP network to report problems and show bottlenecks on the County network, as well as provide network mapping and change control. Additionally, 'NetFlow' monitoring can help distinguish between the types of traffic that are traversing the County network, improving security and QoS planning.
- **Johnson Controls P2000 Door Security -** This system is a database driven system based on Microsoft SQL server that controls access to Doors at various locations within the county via card access. Included in this system is the mechanism to create badges/cards for access and a reporting front end. This system will be upgraded in 2007.
- **SMTP Relay –** This appliance is the software firewall that is the primary interface of our email system with the Internet. This provides anti-SPAM filtering and isolates our email server from being directly exposed to the Internet. This system was upgraded in December 2006 to replace an inferior gateway product.
- **HelpSTAR –** This help desk call tracking software enables the Data Processing Department to log help calls as they come in. Logged calls can then be prioritized

and staff assigned for resolution. HelpSTAR also provides historical reporting and analysis tools that assist DP staff in numerous ways, including time tracking.

- **Microsoft Operations Manager (MOM) 2005 –** This real time monitoring system provides a single global view of all servers managed by Data Processing. MOM generates alerts and emails when specified systems are changed or fail. This alerts Data Processing staff in a proactive manner to many common system problems.

6.2 Line of Business Applications

The software applications in this section meet specific needs for individual or multiple county departments. They encompass a broad mix of third party vendor products and technologies to in house designed and built applications. They include:

- **PeopleSoft Financials 7.02** – The enterprise financial information system that services core needs of many departments. This product provides budgeting, purchasing, accounts payable, and general ledger functionality for all county departments.
- **PeopleSoft HRMS 7**.51 – Payroll and employee/benefits administration software system.
- **Time Capture –** Visual Basic application developed in house to provide a quick and easy to use interface for department payroll personnel to enter employee work hours and leave usage each payroll period. Time Capture interfaces with PeopleSoft HRMS.
- **Manatron Visual Property (MVP) –** This software system services most of the real estate related needs of the Auditor and Treasurer's offices. MVP functions as a computer aided mass appraisal (CAMA) system and property tax billing and collections management system. It also provides functionality for real property maintenance (splits, plats, etc…). Data from this system populates the Auditor's web site that many county residents rely on for up to date property tax and appraisal information.
- **Maximus CourtView 2000 –** This is an electronic court case management system. It serves the case management and scheduling needs for the entire justice system in Mahoning County including the Clerk of Courts, Common Pleas Courts, Domestic Relations Court, Probate Court, Area Courts, JJC, and the Prosecutor's Office. Currently, courts have been converted, except for JJC (February 2006) and the Prosecutor's department (May 2006). Also, plans have been made to implement document imaging for the courts, and several web based services including public query, electronic filing from attorneys, and electronic payment of certain court fees.
- **Geographical Information System (GIS**) – The Mahoning County GIS provides, at the simplest level digital maps. However this enterprise system contains a wealth of information critical to the operations of the Auditor, Treasurer, Recorder, Engineer, Sanitary Engineer, other county departments and many private or commercial entities. The GIS system contains an almost unlimited potential to help

the county manage its information better. The publicly accessible GIS web site has provided enormous public benefits. Continued growth and utilization of this system will make it essential to many county operations going forward.

- **Emergitech InterCAD** – This computer aided dispatch (CAD) software system is used by the E911 call center. It is the core information system providing location and incident management abilities to call center dispatchers.
- **The Mahoning County *Communicator* –** This web portal, initially released in December 2005 and located on the web at www.mahoningcountyoh.gov, added significant improvements and enhancements in 2006. Things such as right-hand tier navigation, an improved front page, a county-wide calendar, internal department calendars, picture libraries, and updated global FAQ section have added significant value to the user community as well as to the public. No major changes are planned for 2007. There are planned major updates for 2008 and into 2009 as the platform for this product changes with pending technology.
- **Inter-tel Axxess 9.10 Phone System** – The county now supports 21 different phone switches county-wide running on Inter-tel Hardware and the Inter-tel Axxess software platform at version 9.10. Additionally, the larger more robust systems located at the county's largest location run these applications on Windows 2000 Servers. All Voicemail systems run on Windows 2000 Servers. These systems are connected via the county IP network and allow for 4-digit dialing, advanced voice routing, call announcements, voicemail, common directory/phonebook and outbound local and long distance calling. All county Phone Switching is managed in house by Mahoning County Data Processing, providing significant costs savings over using an external vendor for call routing.
- **Prescription Drug Assistance Program (PDAP)** – This web based application was developed in house to provide the Council on Aging and local area senior groups assistance with learning of available discounts and acquiring necessary prescription drugs. This Program was re-written by Data Processing in March 2006 to better serve the users of the program and has saved Mahoning County Seniors millions of dollars since inception. This product will be decommissioned in 2007.
- **Various Web and Intranet Sites** – Data Processing hosts several departmental web sites on in house web servers, including the new intranet product ONESite, released October 2005 by Data Processing, and updated in 2006 to reflect new changes. Other web sites are vendor-produced administration sites for support of county services, including WSUS, a security patch management system deployed by Data Processing in August of 2005.